NC STATE UNIVERSITY

North Carolina State University

2000 Higher Education Bond Program

Summary Document

Prepared by Facilities Division

September 2009

Celebrating the Midpoint in Bond Expenditures
March 7, 2005

2000 Higher Education Bond Program

Highlights

- *46 Construction Projects*
- *$473 Million in Bond Funds*
- *$77 Million from other sources*
- *Land Acquisition Started: January 2001*
- *Construction Started: August 31, 2001*
- *Construction Completed: May 15, 2009*
- *Construction Completed:*
  - ✓ *Ahead of Schedule*
  - ✓ *On Budget*
  - ✓ *With No Outstanding Contractor Claims*
- *Renovated 952,505 gross square feet (GSF) of space*
- *Constructed 1,363,656 GSF of new space on campus plus off-campus field research labs*
- *Achieved 20.8% HUB and 5.5% African-American participation*

- *Used multiple construction delivery methods:*
  - *29 Single Prime*
  - *1 Multi Prime*
  - *14 Construction Manager @ Risk*
  - *1 Design Build*
  - *1 Single Prime / Force Account*
- *$725 Million for 53 other active projects during the period January 1, 2001 – June 30, 2009*
- *$1.275 Billion in total capital activity*

Program Endorsements

Fox Science Teaching Lab

When the Lab was first used during the fall semester of 2004, Dr. Maria Gallardo-Williams, coordinator, Organic Chemistry Labs, said, "Our student survey score improved this semester, yet we are not teaching differently. We think that's a sign of how the building itself is positively influencing the learning experience"

Engineering Building I Atrium

"I am pleased that we built such attractive, open, and comfortable common areas in Engineering Building I. This is a unique and powerful learning and communication environment for faculty and students."

– Dr. Peter Kilpatrick, former department head, Chemical Engineering

Program Endorsements

Outdated Lab in Withers Hall

New Classroom

"The transformation of outdated science labs in Withers Hall to classrooms and offices for CHASS faculty and staff has promoted scholarship in the humanities, and our ability to share the fruits of that scholarship with graduate and undergraduate students."

- Dr. Jeff Braden, dean, College of Humanities and Social Sciences

Improving Energy Efficiency

"The replacement of window A/C units and old Chlorofluorocarbon (CFC) chillers with high efficiency, environmentally compliant central chilled water plants has reduced energy consumption and maintenance costs, improved the campus environment, and increased system reliability beyond the expectations from the engineering studies. Through the construction of the central plants, the Bond Program positioned NC State to meet the research, energy, and environmental challenges of the present and the future."

– Jack Colby, Assistant Vice Chancellor, Facilities Operations

PREFACE

In 1997 and 1998, the General Assembly directed the Board of Governors of the UNC System to identify the capital needs at each of the 16 campuses. The resulting study, entitled *Facilities Profile and 10-Year Capital Plan,* outlined the facilities deficiencies at NC STATE and the need for additional facilities to meet the ground swell of enrollment growth and research activity projected for the University. The study uncovered numerous deficiencies such as overcrowded classrooms, leaking roofs, outdated electrical systems, cracked foundation walls, laboratories with obsolete fume hoods, insufficient cooling and heating capacity, and accessibility problems. It became the basis for legislative review and the overwhelming passage of the 2000 Higher Education Bond Bill by North Carolina voters on November 7, 2000.

NC State University received $473 million. The first building project, the Research and Teaching Feed Mill, got underway on August 31, 2001 with several others starting soon thereafter. The first two-thirds of the construction projects were bid when costs were low due to a flat construction market, resulting in attractive pricing. The balance came at a time when material costs had escalated dramatically and labor was in short supply. The university met the challenge by anticipating this trend and shifting savings to later periods.

Accomplishing this vast amount of work over such a short period of time required the participation of every sector of the North Carolina construction industry. To that end NC State worked hard to include Historically Underutilized Business (HUB) contractors and construction managers. The NC State HUB program was successful from the start. This program is regarded as exemplary within the UNC system.

To ensure that the business of the university continued to run smoothly during construction, more than 50 major temporary or permanent building moves were made, involving more than 250 scheduled move events for hundreds of people. A flexible lab space was constructed using a Design/Build delivery system to create swing space up-front and ultimately provide new research space called for in the program.

Construction was completed on May 15, 2009 when the newly renovated Park Shops was approved for occupancy by the State Construction Office. During the height of construction in December 2004, the daily cash flow was $555,000. The university has no outstanding construction claims. Only one major construction claim was made during the period, which was settled in 2007, using the mediation process approved in 2001 in Senate Bill 914.

Now that all projects are completed, the university has:

- Renovated 952,505 gross square feet of space
- Constructed 1,363,656 gross square feet of new space in addition to off-campus field research labs and outlying facilities for the College of Agriculture and Life Sciences
- Constructed modern science buildings and recycled vacated structures for classrooms and faculty space to meet enrollment expansion
- Replaced hundreds of window A/C units on the original campus with high efficiency state-of-the-art central chiller plants, reducing energy consumption and maintenance costs, improving the campus environment, and increasing system reliability.
- Constructed a central chilled water and steam plant on Centennial Campus and modernized and expanded capacity of the central chilled water and steam plant on Centennial Biomedical Campus
- Made campus-wide improvements in information technology
- Acquired critical parcels of land at a total cost of $4.6M
- Migrated support activities to the periphery of campus and reclaimed valuable vacated space for core academic and research activities
- Installed modern wayfinding signage throughout campus
- Created an accessible path on both ends of the main tunnel connecting the North and Central campuses under the traversing railroad tracks
- Demonstrated the university's commitment to the vision set forth in the 2000 Physical Master Plan, stating that "NC State is becoming a beautiful tapestry of Campus neighborhoods…woven into a coherent whole by a system of footpaths." Two major initiatives included:
  - New courtyard on North Campus with the construction of the Fox Science Teaching Lab and the renovation and expansion of David Clark Labs
  - New campus hearth in the old Riddick Stadium area with the construction of SAS Hall and the renovation of Park Shops
- Created sufficient space to support a 19.65 % enrollment growth of 5,398 full time equivalent (FTE) students

Major Building Highlights

- With the completion of Engineering Building I and II, the College of Engineering began its migration to Centennial Campus, allowing for the renovation and reuse of older buildings on North Campus for other colleges
- The Fox Science Teaching Lab and the David Clark Lab on North Campus are providing state-of-the-art chemistry, physics and zoology labs and new greenhouses for horticultural students
- Demolition of Riddick Stadium and the Morris Building and construction of SAS Hall is not only providing classrooms and offices for math and statistics students, but also has created a new campus courtyard and made Stinson Drive more pedestrian-friendly

Although all Bond Projects have been completed, the university continues "Building a New NC STATE" to meet the educational, economic development, and quality of life needs of our state and its people. Major construction projects include a third engineering building on Centennial Campus and an animal hospital on Centennial Biomedical Campus. Design plans are underway for the James B. Hunt, Jr. Library on Centennial Campus.

Engineering Building III

Terry Animal Hospital

NC STATE UNIVERSITY

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